

# You Are Bugging Me!

---

**Reporting Category** Probability and Statistics

**Topic** Gathering and organizing data to construct graphs

## Materials

- Bug Pictures sheet (attached)
- Bug-Whacking Data Collection sheet (attached)
- Whacked Bug Pictures sheet (attached)
- Bar Graph sheet (attached)
- Fly swatter
- Butcher paper
- Tape
- Markers



## Vocabulary

*data, picture graph, tally mark, picture graph, bar graph, axis*

## Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

Note: Use this activity only after students have had experience with picture graphs and bar graphs. Prior to the activity, cut out the Bug Pictures, and display them in a random arrangement for students to see.

1. Engage students by telling them a fictional story about bugs invading the classroom last night, pointing out the bugs posted on the board. Explain that today, you really need some help “whacking” these bugs with a fly swatter. Tell students they will be collecting data on the kinds of bugs that are whacked so they can make graphs.
2. Give each student a copy of the Bug-Whacking Data Collection sheet. Have students brainstorm ways to keep track of the bugs that are whacked, and list their ideas on the board (e.g., tally marks, check marks, counting, pictures). Tell students that the class will use tally marks in this activity. Emphasize that students are in charge of collecting their own data, and stress the importance of collecting and recording data accurately.
3. Have a student come up, hold the fly swatter, turn around twice, and then whack a bug picture posted on the board. Have the student announce what bug was whacked, and have all students write the name of the bug and make a tally mark next to it on their data collection sheets. Do not remove the bug from the board. Continue this process until every student has had a turn.
4. After each student has whacked a bug, have students summarize their data by totaling their tally marks and recording the totals on their data collection sheets.
5. Explain that the class will use this collected data to make a picture graph and then each student will make a bar graph individually. Using butcher paper, markers, and Whacked Bug Pictures, create a class picture graph. Engage students in a discussion of the parts of

the graph that need to be labeled (title, key, axes). For a simply key,  = 1 bug; for a more complex key use  = 2 bugs.

6. Ask student volunteers to share their data for each category, and tape the appropriate number of pictures to the butcher paper. Ask students repeatedly to check that their data matches the data on the picture graph.
7. Hand out the Bar Graph sheet, and have student's work in pairs to create vertical bar graphs of the same data by shading in blocks on the bars that represent the collected data. Have them self-check by using the checklist on the sheet to ensure that they included all necessary components of the graph.

### Assessment

- **Questions**
  - In the picture graph, why do we need a key?
  - If we turn the picture graph horizontally, is it still a picture graph? Why, or why not?
  - In your bar graph, what does it mean when you shade in one bar? Does it mean one bug? Does it mean two bugs? Does it mean five bugs?
  - How might we show that one bar = one bug?
- **Journal/Writing Prompts**
  - Your teacher was grading graphs last night and came to a picture graph that has smiley faces in the key, but ice cream flavors as the horizontal axis label. There was no title on this graph. Your teacher cannot grade the graph because she/he can't tell what it is supposed to be about. Describe what the student should have done in order to help the teacher understand the graph.
  - Donna was out catching fireflies this week. On Monday, she caught 10 fireflies, on Tuesday, she caught 7, and on Friday, she caught 2. What would be a good title for a bar graph of this data? Describe what the key of a picture graph of this data would look like.
- **Other**
  - Check bar graphs for accuracy, correct data, titles, and labels.

### Extensions and Connections (for all students)

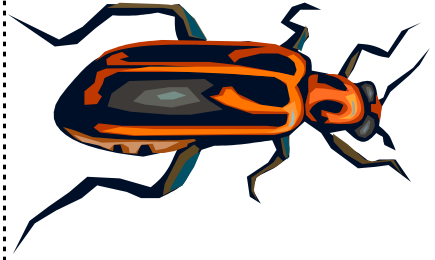
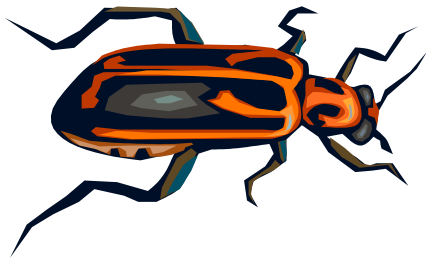
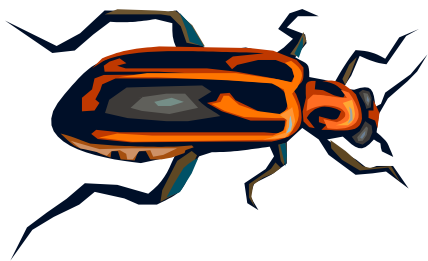
- Have students survey another class, using the question, "What bug are you most scared of?" Then, have them create picture graphs and/or bar graphs of the data. This data can be also be used with SOL 2.19 and analyzed based on gender, homeroom class, age, etc.

### Strategies for Differentiation

- Allow students who find small motor coloring a challenge to glue strips of colored paper cut to size onto the bars of the bar graph. This can ensure accuracy.
- Use more challenging increments for the pictograph key. Ask students to explain the increment that they selected. Ask whether it is appropriate to use increments of 10 when the greatest number of data collected is 7.
- Create a huge bar graph by drawing a large bar graph grid on the floor with sidewalk chalk and laying down whole sheets of construction paper to fill each bar.

# Bug Pictures

Cut apart on the dotted lines, and hang on the board.



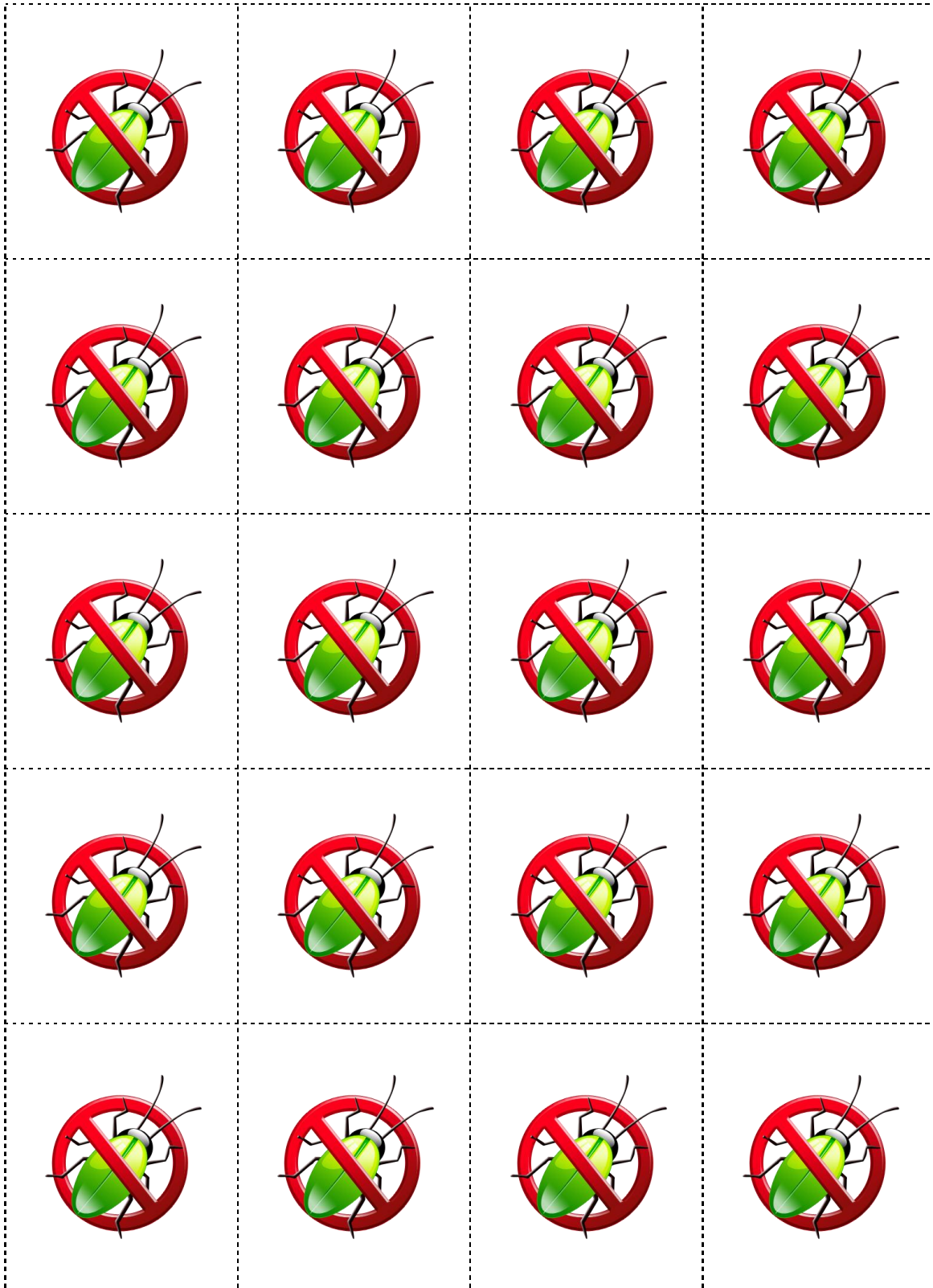
# Bug-Whacking Data Collection

Name \_\_\_\_\_

Title of Data \_\_\_\_\_

Type of bug	Number of times whacked (tally)	Total

# Whacked Bug Pictures



# Bar Graph

Name \_\_\_\_\_

Title \_\_\_\_\_

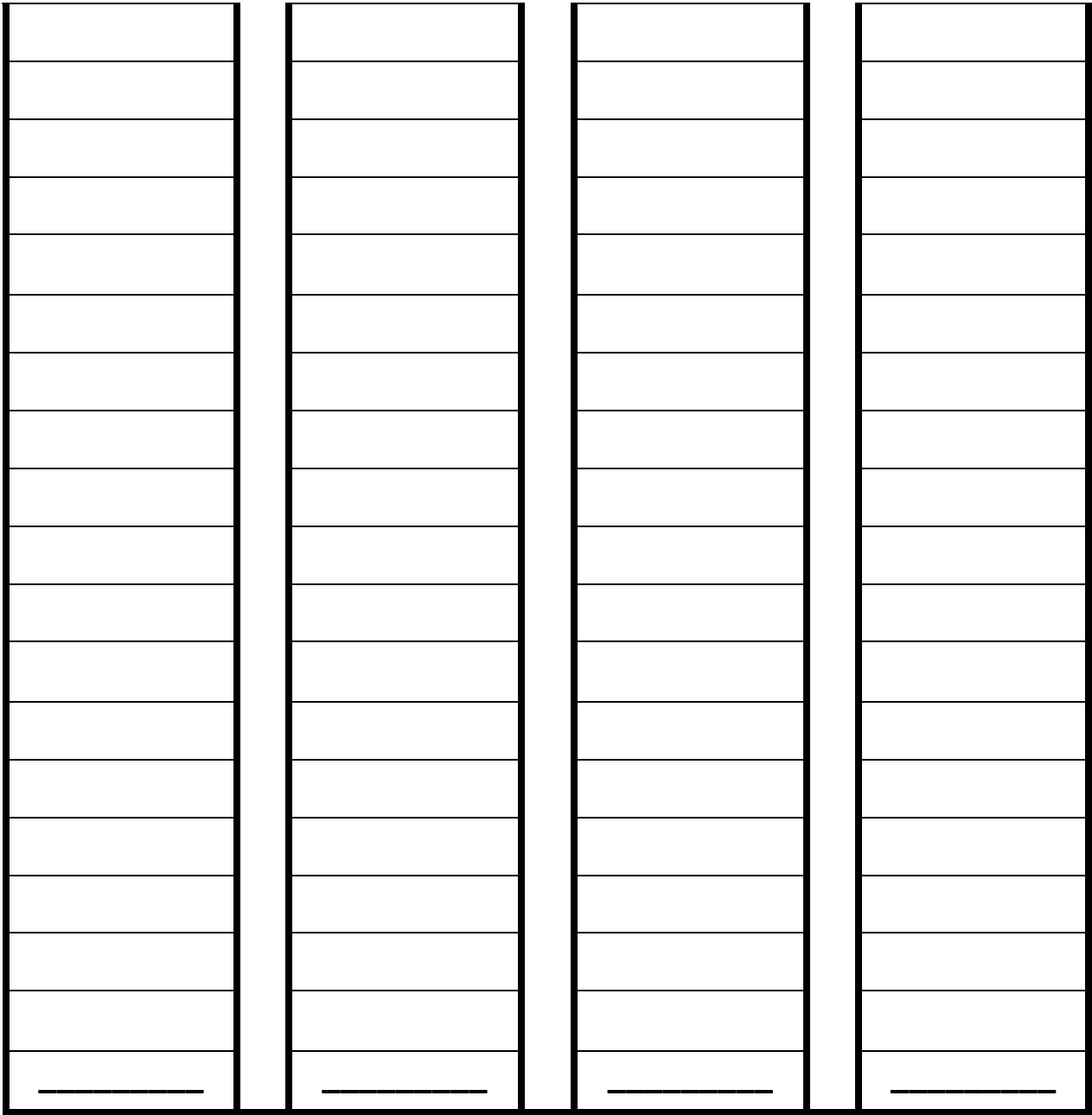
Does your graph include...

☐ Title

☐ Axes labels

☐ Bar labels

☐ Neat work



\_\_\_\_\_